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## TUMORS OF PAROTID GLAND IN ALBANIA, 10 YEAR STUDY RESULTS

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### Abstract

**Objective:** To evaluate surgical variations and treatment results of parotids gland masses that require parotidectomy. **Methodology:** The study group includes patients diagnosed in ENT service of UHC Tirana with tumors of the parotid gland and undergone parotidectomy. We recorded all patient personal data, histology (benign or malignant) of the disease, FNAC reports, type of surgical procedure, complications, and histology of the excised masses. All data was elaborated by statistical analysis with SPSS version 15.0. **Results:** Of 96 patients treated between years 2005-2014, 47 (49%) were males and 49 (51%) were female, with e median age of 42 $\pm$ 12.6 years old. All patients presented with and indolent mass around the ear. 90.47% (87) of the patients had a benign tumor, and 9.52% (9) had a malignant tumor. Superficial parotidectomy was performed in 79.36% (n=76) of the patient, total parotidectomy was performed in 19% (n=18) of the cases, and total extended parotidectomy was performed in 2 cases with mucoepidermoid carcinoma. The most frequent post-operative complication was auricular major nerve palsy (n=14; 15%), followed by transitory palsy of the facial nerve (n=8; 9%). **Conclusions:** Parotid gland masses effect people of both genders. Most of the patients have benign disease and mostly pleomorphic adenoma. The surgical procedure performed more frequently is superficial parotidectomy.

**Key words:** Parotid gland, superficial parotidectomy, pleomorphic adenoma, facial nerve palsy, mucoepidermoid carcinoma.

### Introduction

The parotid gland is the head and neck organ most affected by tumoral diseases. It is the salivary gland most affected by tumoral disease, calculated approximately around 80%. Incidence of parotid gland masses is around 1 in 100.000<sup>11</sup>. In 80% of the cases pleomorphic adenoma in encountered, while Warthin's tumor is found in 10% of the cases. Of the malignant tumors the most frequent encountered is mucoepidermal carcinoma, followed by adenocystic carcinoma<sup>1-3</sup>.

From 50 years, parotidectomy is performed routinely in our country without nerve monitoring and with no nerve complications. From our experience even though patients have imaging findings (like MRI), in some case (3 - 4 patients) the differential diagnose with parapharyngeal space tumors has been difficult. In most cases we have performed superficial parotidectomy, and differential diagnose with parapharyngeal space tumors was done intra-operatively.



## **Methodology**

This study was performed with patients presented in our ENT service of the UNH Tirana (University Hospital Center of Tirana) during the 2005-2014 year period, and underwent parotid surgery. Patients presented with other pathologies, like parotitis abscess, and did not undergo parotidectomy, were excluded from the study. The initial diagnose was achieved through patient history, physical and complementary examinations. Patient data was gathered from their statistical record in the UHCT Statistics Service. Histopathology data was gathered from the Department of Anatomy and Pathology. Type of performed surgery depended on presurgical diagnose, FNAC, radiology, and clinical presentation of the tumor.

Superficial parotidectomy was performed in all benign tumors of the superficial lobe. Total parotidectomy was chosen for malignant tumors and benign tumors that infiltrated the deep lobe. Extended total parotidectomy was performed in locally advanced malignant tumors. Facial nerve identification, the V-shaped sulcus was located from the mastoid bone apex near the external auditory canal. Tympanomastoidean fissure and the trageal cartilage were the orienting points for nerve identification. In all cases the nerve was identified in its usual bifurcation point. Afterward all nerve branches were identified and dissected, and superficial parotidectomy was completed. In no case we used nerve monitoring for nerve identification.

Patient profile, social-demographic, clinical signs at presentation, benign or malignant nature of the tumor, FNAC reports, type of performed surgery, and histological reports of the masses were taken from patients' clinical charts.

Data was analyzed with SPSS (Statistical Package for Social Sciences) version 15. Numerical data, like age, were expressed by mean  $\pm$  standard deviation, while categorical data, like gender distribution, histological diagnose, surgical procedure and complications, were expressed as frequencies and percentage. Two tables were used to summarize the data.

## **Results**

Of 126 patients, 51% (n=49) were female and 49% (n=47) male. Age varied from 15 - 65 years old. Most of the patients (63%) were in the third and fourth decade of life. Median age was 43  $\pm$  9.2 yrs old.

The most frequent clinical sign at presentation was the presence of a mass round the ear, which was present in all patients. Other signs were facial nerve palsy in 3% (n=3) and pain in 2% (n=2) of the cases. If all patients, 90.47% (n=87) had benign disease, and 9.52% (n=9) had malignant tumor. The deep lobe was involved in 2% (n=2) of the case, while 8% (n=8) had recurrent swelling. Table 1 shows the histological diagnose of the surgically excised masses.

**Table 1: Histopathological diagnose in all patients (n=96)**

DIAGNOSE	NUMBER OF PATIENTS
Pleomorphic adenoma	80(83.33%)
Mucoepidermoid carcinoma	6(6.25%)
Warthin's tumor	4(4.16%)
Xiphilic adenoma	2(2.08%)
Adenoid cystic carcinoma	2(2.08%)
Ex-pleomorphic adenoma carcinoma	2(2.08%)

Postsurgical complication include auricular major nerve paresis, in 15% (n=19) of the cases, facial nerve paresis in 8% (n=8), facial nerve palsy in 4.76% (n=5), Frey's syndrome in 2.1% (n=2). The diagnostic value of FNAC was evaluated and has a specificity of 98.24%, and sensitivity of 83.35%. Diagnostic accuracy is 96.82%. (Table 2)

**Table 2: Calculation of the diagnostic accuracy of FNAC in the diagnose of malignant tumors of the parotid gland**

	FNAC		Total
	Positive for malignancy	Negative for malignancy	
Histology positive for malignancy	8	2	10
Histology negative for malignancy	1	85	86
Total	9	87	96



## **Discussion**

This study was focused on parotid gland tumors, which is the most salivary gland affected by tumoral diseases. It is involved by a variety of different benign and malignant conditions for which a wide range of surgical procedures are available<sup>8,9,10</sup>. The present study is one the largest reported local series on parotid gland disorders from Albania. In this study, the mean age for parotid gland disorders was 41 years confirming to several published studies <sup>9, 12, and 13</sup>. However, several studies from the West have reported these disorders to be more common in relatively advanced groups<sup>1,2</sup>. In this study, there was a slight female predominance. Several published studies have reported similar more frequent involvement of females than males.

In this study, pleomorphic adenoma constituted the commonest pathology affecting the parotid gland. Most of the publishing literature has reported pleomorphic adenoma to be the commonest pathology afflicting the parotid gland<sup>5,7,16</sup>. Share of malignancies was about 9.52%. Different studies have reported variable percentage of malignancies in their patients. Onder et al. have reported 24% malignancies in their parotid gland disorders<sup>15</sup>. Takahama et al. have reported even higher frequency of malignancies at 40% <sup>1</sup>. In this series the commonest malignant tumor was mucoepidermoid carcinoma followed by adenoid cystic carcinoma. These findings conform to what is reported by most of the published literature<sup>5, 15, and 17</sup>.

In this study, FNAC was found to be very useful for diagnosing malignancies of the parotid gland. It was found to have 98.24% specificity and 83.33% sensitivity. It is economical and easy to perform in parotid swelling. These findings conform to what is reported by Cohen et al. who have reported similar diagnostic accuracy of FNAC in parotid gland tumors<sup>7</sup>. . Dissemination of tumor cells with FNAC is a theoretical risk and is a theoretical risk and is not supported by any published data.

In this study, the facial nerve transient paresis occurred in 8% cases while 4.76% cases had facial nerve palsy. These finding conforms to most of the reported studies however, some studies have reported as high frequency as 39% of these complications <sup>11, 12, 13</sup>. These uses of nerve stimulators, staining methods and other techniques have been explained in literature for safeguarding the nerve and these may help to reduce the frequency of such disabling complications.

In our clinical practice we have encountered great variation in facial nerve trunk and branches anatomy, this in many cases has made nerve identification more difficult.



## Conclusions

Parotid gland tumors commonly affect relatively young individuals of either gender. Majority of the patients present as a painless lump in parotid region. Most of the patients have benign pathology while a small percentage has malignancy. Superficial parotidectomy is the most commonly offered surgical procedure. Parotid surgeries are safely performed in general surgery units with low morbidity and no mortality.

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